

Inkyu Shin | Curriculum Vitae

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I am a third-year Ph.D. student at Korea Advanced Institute of Science and Technology (KAIST) under the co-supervision of Prof. Kuk-Jin Yoon and Prof. In So Kweon. I earned my B.S and M.S degrees in automotive engineering from Hanyang University(HYU) and KAIST in 2019 and 2021. I interned at NEC Laboratories America, Inc, San Jose, CA (with Dr. Yi-Hsuan Tsai), and Google Research (with Dr. Liang-Chieh Chen, and Dr. Jun Xie)

Research Interests

My research interest lies in computer vision, with a focus on developing effective learning method for processing data and building strong recognition models. Specifically, I am interested in the following research topics:

- **Learning for Data-efficiency**
 - Learning from Simulation
 - Domain Adaptation
 - Unsupervised Learning
 - Self-supervised Learning
- **Learning for Visual Recognition**
 - Image Segmentation
 - Video Segmentation

but also open to other explorable/challenging domains.

The ultimate purpose of these researches is to apply to a variety of applications (e.g., Autonomous driving, Robot Navigation, AR/VR).

Research Experience

- **Google Research**
Student Researcher Intern, Mentors: Liang-Chieh Chen and Jun Xie
LA, CA (virtual)
May 2022 - April 2023
- **NEC Laboratories America, Inc**
Research Intern, Mentors: Yi-Hsuan Tsai
San Jose, CA (virtual)
May 2021 - Aug 2021
- **Korea University**
Research Intern, Supervisor: Jaegul Choo
Seoul, Korea
Sep 2018 - Dec 2018
- **Hanyang University**
Research Assistant, Supervisor: Myuong-Ho Sunwoo
Seoul, Korea
Jul 2018 - Aug 2018

Education

- **Korea Advanced Institute of Science and Technology (KAIST)**
Future Vehicle Ph.D. degree, Co-Advisors: Kuk-Jin Yoon and In So Kweon
Daejeon, Korea
2021–
- **Korea Advanced Institute of Science and Technology (KAIST)**
Future Vehicle M.S degree, Advisor: In So Kweon
Master's Thesis: Learning to Scale the Labels for Self-training based Domain Adaptation
Daejeon, Korea
2019–2021
- **Hanyang University (HYU)**
AUTOMOTIVE ENGINEERING B.S degree
Seoul, Korea
2013–2019

Publications

(C: conference / J: journal / P: preprint / * :equal contributions)

International Conference.....

- [P4] **Video-kMaX: A Simple Unified Approach for Online and Near-Online Video Panoptic Segmentation**
Inkyu Shin, Dahun Kim, Qihang Yu, Jun Xie, Hong-Seok Kim, Bradley Green, In So Kweon, Kuk-Jin Yoon, Liang-Chieh Chen
arXiv, 2023
- [P3] **MATE: Masked Autoencoders are Online 3D Test-Time Learners**
Muhammad Jehanzeb Mirza*, Inkyu Shin*, Wei Lin*, Andreas Schriebl, Kunyang Sun, Jaesung Choe, Horst Possegger, Mateusz Kozinski, In So Kweon, Kuk-Jin Yoon, Horst Bischof
arXiv, 2023
- [C11] **TTA-COPE: Test-Time Adaptation for Category-Level Object Pose Estimation**
Taeyeop Lee, Jonathan Tremblay, Valts Blukis, Bowen Wen, Byeong-Uk Lee, Inkyu Shin, Stan Birchfield, In So Kweon, Kuk-Jin Yoon
Computer Vision and Pattern Recognition (CVPR), 2023
- [C10] **Bidirectional Domain Mixup for Domain Adaptive Semantic Segmentation**
Daehan Kim*, Minseok Seo*, Kwanyong Park, Inkyu Shin, Sanghyun Woo
Association for the Advancement of Artificial Intelligence (AAAI), 2023
- [C9] **Learning Classifiers of Prototypes and Reciprocal Points for Universal Domain Adaptation**
Sungsu Hur, Inkyu Shin, Kwanyong Park, Sanghyun Woo, In So Kweon
Winter Conference on Computer Vision (WACV), 2023
- [C8] **Moving from 2D to 3D: volumetric medical image classification for rectal cancer staging**
Joohyung Lee*, Jieun Oh*, Inkyu Shin, You-sung Kim, Dae Kyung Sohn, Tae-sung Kim, In So Kweon
Medical Image Computing and Computer Assisted Intervention (MICCAI), 2023
- [C7] **MM-TTA: Multi-Modal Test-Time Adaptation for 3D Semantic Segmentation**
Inkyu Shin, Yi-Hsuan Tsai, Bingbing Zhuang, Samuel Schulter, Buyu Liu, Sparsh Garg, In So Kweon, Kuk-Jin Yoon
Computer Vision and Pattern Recognition (CVPR), 2022
- Received *Qualcomm Innovation Award 2022*.
- [C6] **UDA-COPE: Unsupervised Domain Adaptation for Category-level Object Pose Estimation**
Taeyeop Lee, Byeong-Uk Lee, Inkyu Shin, Jaesung Choe, Ukcheol Shin, In So Kweon, Kuk-Jin Yoon
Computer Vision and Pattern Recognition (CVPR), 2022
- [P2] **Unsupervised Domain Adaptation for Video Semantic Segmentation**
Kwanyong Park*, Inkyu Shin*, Sanghyun Woo, In So Kweon
arXiv, 2021
- [C5] **LabOR: Labeling Only if Required for Domain Adaptive Semantic Segmentation**
Inkyu Shin, Dong-Jin Kim, Jae Won Cho, Sanghyun Woo, Kwanyong Park, In So Kweon
International Conference on Computer Vision (ICCV), 2021 (Oral)
- Received *Qualcomm Innovation Award 2021*.
- [P1] **Learning Representations by Contrasting Clusters While Bootstrapping Instances**

Junsoo Lee, Hojoon Lee, **Inkyu Shin**, Jaekyoung Bae, In So Kweon, Jaegul Choo
arXiv, 2020

- **[C4] Discover, Hallucinate, and Adapt: Open Compound Domain Adaptation for Semantic Segmentation**
Kwanyong Park, Sanghyun Woo, **Inkyu Shin**, In So Kweon
Conference on Neural Information Processing Systems (**NeurIPS**), 2020
- Received *Qualcomm Innovation Award 2021*.
- **[C3] Two-phase Pseudo Label Densification for Self-training based Domain Adaptation**
Inkyu Shin, Sanghyun Woo, Fei pan, In So Kweon
European Conference on Computer Vision (**ECCV**), 2020
- Also presented at "Visual Learning with Limited Labels" Workshops in conjunction with (**CVPR**), 2020
- **[C2] Unsupervised Intra-domain Adaptation for Semantic Segmentation through Self-Supervision**
Fei pan, **Inkyu Shin**, Francois Rameau, Seokju Lee, In So Kweon
Computer Vision and Pattern Recognition (**CVPR**), 2020 (**Oral**)
- Received *Qualcomm Innovation Award 2020*.
- **[C1] Image-to-Image Translation via Group-wise Deep Whitening-and-Coloring Transformation**
Wonwoong Cho, Sungha Choi, David Keetae Park, **Inkyu Shin**, Jaegul Choo
Computer Vision and Pattern Recognition (**CVPR**), 2019 (**Oral**)

Awards

- 2022: Qualcomm Innovation Award.
- 2021: Qualcomm Innovation Award.
- 2020: Qualcomm Innovation Award.

IT skills

- Languages: Python, MATLAB, C, LATEX
- Libraries: PyTorch, TensorFlow

References

- **Prof. In So Kweon**
Relationship: M.S & Ph.D Advisor
Professor, Electrical Engineering, KAIST
Email: iskweon77@kaist.ac.kr
- **Prof. Kuk-Jin Yoon**
Relationship: Ph.D Advisor
Professor, Mechanical Engineering, KAIST
Email: kjyoon@kaist.ac.kr
- **Dr. Yi-Hsuan Tsai**
Relationship: Internship mentor at NEC Lab.
(Previous) Research scientist, NEC Lab.
(Current) AI/ML Tech Lead Manager, Google
Email: wasidennis@gmail.com

- **Dr. Liang-Chieh Chen**

Relationship: Internship mentor at Google Research

(Previous) Research scientist, Google Research

(Current) Research scientist, ByteDance

Email: lcchen@cs.ucla.edu